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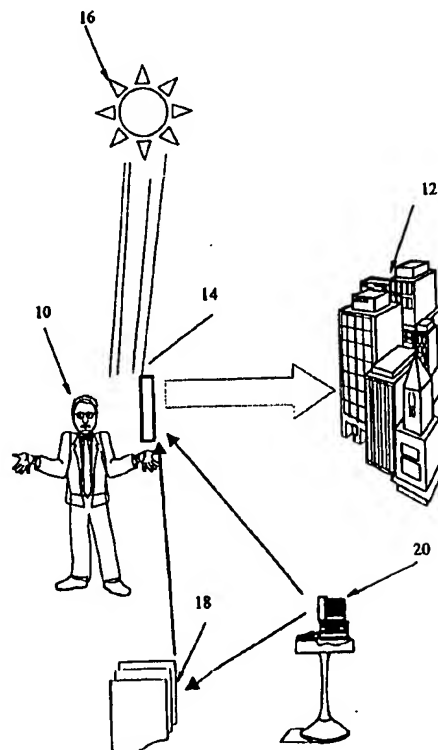
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(54) Title: TOURISTS' GUIDE APPARATUS

(57) Abstract

A guiding apparatus, particularly for use by tourists. The apparatus is provided with memory for storing relevant information (maps and background) about the touring sites, possibly assembled and edited by the user from the Internet. A built-in GPS prompts the information for each site in synchronization with the actual sight-seeing time thereof.



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TOURISTS' GUIDE APPARATUS

BACKGROUND OF INVENTION

5 This invention generally relates to tourists aids.

In planning a tour, one must refer to a number of different, separate sources of information, e.g. maps, guide books and other literature pertaining to specific background aspects of his/her individual fields of interest such as nature, culture, history, religion, etc.

10 One of the most handy as well as detailed source of such information is the Internet.

Another aspect of touring, namely during the actual trip, is orientation and navigation. To this end, besides maps and compasses, GPS (Global Positioning System) apparatus are being used, mostly (in the present
15 context) in motorcars.

It is thus the general object of the present invention to integrate the Internet available data sources with the navigation capabilities of GPS based equipment.

It is a further object of the invention to provide a compact, portable
20 tourist's aid apparatus capable of down loading and storing selected information of the type mentioned above, and displaying or otherwise presenting to the user relevant portions thereof at the appropriate location and in synchronization with the progress of the trip.

It is a still further object of the invention that the apparatus will enable the

user to elect among a variety of alternative routs for moving from one given destination to another.

5 SUMMARY OF THE INVENTION

Provided according to the invention is a guiding apparatus particularly for use by tourists, comprising first memory means for storing data of tourists site locations in a given geographical area, second memory means for storing predetermined information relating to each of the tourist sites, 10 means for identifying the geographical area within which the apparatus is actually located, first data processing means for representing the tourist sites located in the identified geographical area, means for selecting a site out of the represented tourist sites and second data processing means for representing the information relating to the selected tourist site.

15

BRIEF DESCRIPTION OF THE DRAWINGS

These and additional objects, advantages and constructional features of the present invention will be more clearly understood in the light of the ensuing description of preferred embodiments thereof, given by way of 20 example only, with reference to the accompanying drawings, wherein-

Fig. 1 is a conceptual representation of a system featuring the characteristics of the present invention;

Fig. 2 is a block diagram of a guiding apparatus designed for use 25 according to the present invention;

Fig. 3 is a block diagram of the software application of the apparatus;

5 Fig. 4 illustrates the database features employed in the apparatus;

Fig. 5 is a flow-chart of the apparatus operations;

Fig. 6 is a flow-chart of GPS interface process; and

Fig. 7 is a block diagram of the Internet application.

10 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Schematically shown in Fig. 1, is a tourist 10 seeking relevant information regarding tourists' site 12. Apparatus 14 provided according to the present invention is capable of receiving navigation data from satellite 16. Besides, the apparatus 14 retrieves information from module(s) 18.

15 These modules may be either pre-programmed, commercially available; or self-programmed by the user, e.g. containing selective information down-loaded from the Internet via PC 20.

Conceptually, the apparatus 14 comprises the following components (see Fig. 2): Random Access Memory (RAM) 22 of any conventional type
20 such as CD, hardisk, flash memory, etc., containing data bases as will be described in conjunction with Fig. 4.; RAM 22 which may be incorporated in the apparatus, or provided as a separate, stand-alone unit; Read Only Memory (ROM) 24 programmed with the software required for the operation of the apparatus 14 as will be described with reference to Fig. 3.; user

Interface component 26 facilitating the operation by the user; e.g. keyboard, touch-screen, or voice recognition; display component 28 and/or audio emitter 30; and Global Positioning System (GPS) 32. The GPS may
5 be built-in, or as a stand-alone unit connectable to the apparatus 14.

Fig. 3 depicts: Data processing unit 34 capable of searching and retrieving information according to preset codes allocated to the relevant information that might be of interest to the user, as will be further explained below; image processor 36 enabling visual inspection of selected
10 geographical sites, and advantageously zooming thereon; and real-time sampler 38 for keeping track of the on-line navigation data constantly supplied by the GPS 32.

Fig. 4 further details the RAM databases (see Fig. 2). Block 40 represents, in the present example, the selection of geographic and/or
15 urban maps of the tourist's sites.

Every such site is linked to destination database 42 which includes key-words or listed names enabling convenient and quick access to the desired sites, e.g. geographical location (by coordinates or names), categories (monuments, castles, restaurants, museums, etc.).

20 Once a site is selected, the relevant data is retrieved and presented in any of the forms accessible from facilities 44 (text), 46 (pictorial) or 48 - video/audio databases.

Fig. 5 represents the operating process, and is self-explanatory. Hence, it can be readily seen that initially, after loading the apparatus with any

selected (purchased or self-programmed) module 18, the user introduces the parameters of his request. For example, let us assume that the module pertains to LONDON and PARIS, and the user selects PARIS. The general
5 map of Paris will be displayed.

The user then has the following options:

1. An OFF-LINE mode, namely selecting the desired site out of the map and receiving all data stored in relation thereto; this is the trivial possibility.
- 10 2. A first ON-LINE mode wherein the apparatus 14 is currently updated with the GPS navigation data. The user is thus advised, in real time, of his/her actual location. Consequently, the relevant information relating to all sites located within a predetermined range around the actual position becomes accessible according to the coordinates (or other location
15 parameters) stored in database 42. By suitable selection, the user can further qualify his/her specific interests. If, say, a certain museum has been selected, a recommended route for reaching the place is displayed, perhaps including alternative or additional information (buss / underground lines). On arrival, all information pertinent to the site is available in the
20 form as already described (units 44-48, Fig. 4)

Obviously, the apparatus will be provided with routine options such as "Pause", "Repeat", "Replay" etc.

3. A second ON-LINE mode, wherein the apparatus 14 is to be used as a private tour organizer. Based on instructions contained in the

programmed module 18, the user can be advised of preferred touring routes. The sequential order of the routes depends on the programming of RAM 22. It can be pre-set by the supplier of the commercially available modules 18; in this case the user must follow such pre-set route.

Alternatively, if the user himself plans the tour (see below), then the order of the sites will appear accordingly.

Thus the user can select any one of the available touring routes. The starting point of the route is optional. The guide apparatus 14 (being updated with the GPS navigation data) will sequentially provide the route to be taken for moving from one site to next one.

The flow chart of Fig. 6 illustrates the sequence of operations regarding input of the GPS signals currently received (irrespective of the remaining apparatus functions).

As known, GPS navigation devices in general enable to track-down and advise at any given time the position of the device (relative to a preset reference location).

In application to the case at hand, two modes of operation must be taken into account:

1. The apparatus is active, in the sense that other functions thereof are being operated or ready to be switched on;
2. The apparatus is passive, namely all functions are in OFF-position. Irrespective of being in one or the other of the operational positions, navigation signals currently are received and processed,

preferably by sampling. This means that the routine operation of the apparatus functions are periodically interrupted. During every interruption, the navigation signals are accepted and integrated into the system in one of the following manners:

- (a) In the active mode as above-defined, the signals data is directed to and stored in TEMPORARY MEMORY;
- (b) In the passive mode -- the signals are decoded and matched with the map coordination according to the GPS locating procedure in a now-per-se fashion.

Once the other operative functions of the apparatus are cut-off or otherwise do not interfere -- data accumulated in the TEMPORARY MEMORY is processed in the manner as described in para (b) above.

It will be recalled that users may prefer to down-load data from the Internet, in order to compile pieces of information according to his/her individual preferences.

In order to exemplify this alternative usage mode of the apparatus reference shall be made to Fig. 7.

As shown, a typical Internet site comprises internal search engine designated 50 enabling the user to locate the desired information. This information is stored in a series of databases 56, 58, 60 (compatible with databases 40, 42, 44, 46, 48 of the apparatus) specially designated by suppliers of such service to the interested public -- in this case holders of tourist guide apparatus as proposed according to the present invention.

The searches thus can be made, e.g. by consulting general or more detailed maps, by going through lists of locations or categories, conducting
5 so-called "BOOLEAN" search (Key-words and combinations thereof), etc. Information of interest to the user is traced by the application 52 and then stored in temporary memory facilities 62 for ultimately down-loading (54) and recording in RAM 22 (Fig. 2) of the apparatus 14 via PC 20.

This function allows users to plan ahead the trip according to his/her
10 personal preferences (such as duration, specific interests, time/budget limitations, etc.).

The invention thus provides a novel concept towards tourism in general, but is open to a variety of other applications, e.g. for military use, motor-vehicle navigation and the like where quick and detailed orientation
15 is of major interest.

While the above description contains many specificities, these should not be construed as limitations on the scope of the invention, but rather as exemplifications of the preferred embodiment. Those skilled in the art will envision other possible variations that are within its scope.
20 Accordingly, the scope of the invention should be determined not by the embodiment illustrated, but by the appended claims and their legal equivalents.

WHAT IS CLAIMED IS:

1. A guiding apparatus, particularly for use by tourists,
comprising :
 - first memory means for storing data of tourist sites locations in a given geographical area;
 - second memory means for storing predetermined information relating to each of the tourist sites;
 - means for identifying the geographical area within which the apparatus is actually ;
 - first data processing means for representing the tourist sites located in the identified geographical area;
 - means for selecting a site out of the represented tourist sites; and
 - second data processing means for representing the information relating to the selected tourist site.
2. The apparatus as claimed in Claim 1 further comprising a database containing information relating to routes leading from any one of the sites to another in a sequential order for guiding the user from a first-in-line site to a next-in-line site.
3. The apparatus as claimed in Claim 2 wherein the information stored in the first memory means is downloaded from the Internet.

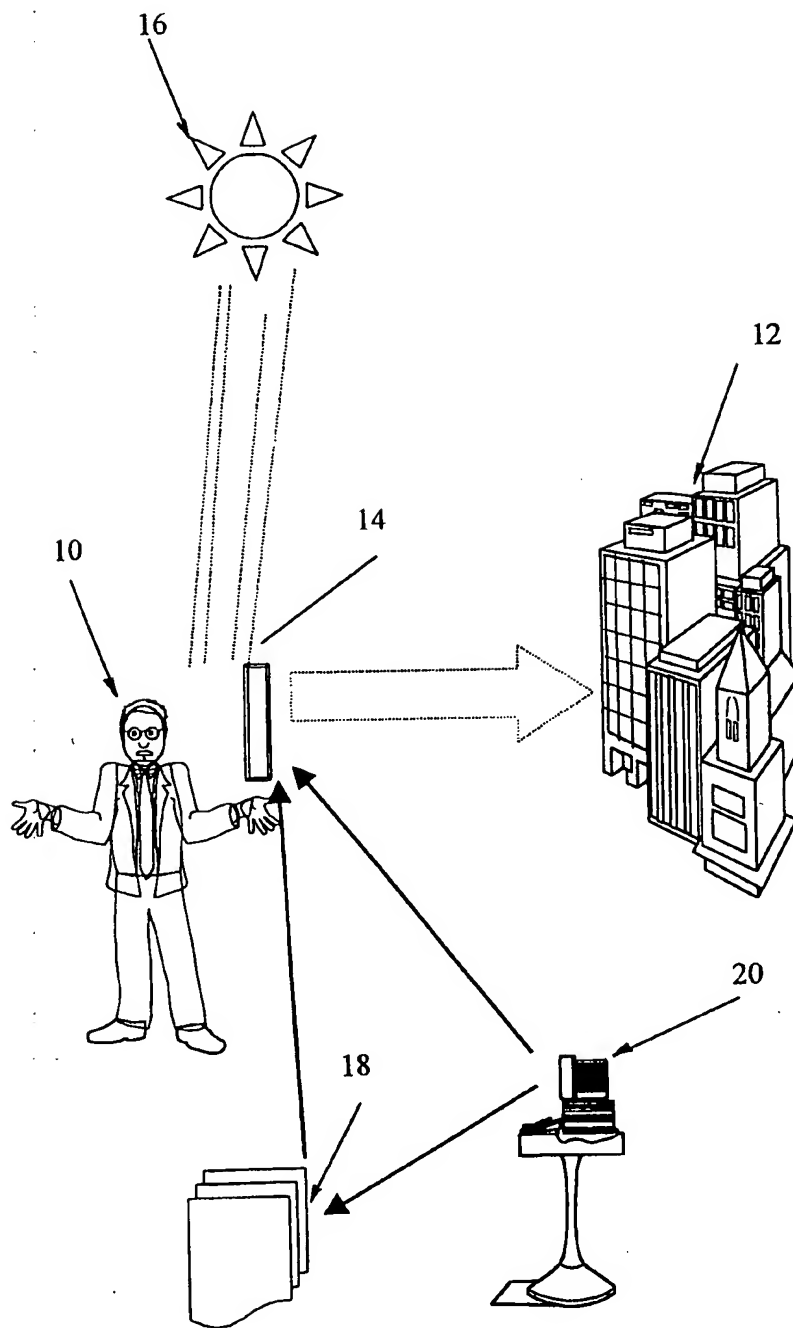
4. The apparatus as claimed in Claim 3 wherein the information stored in the second memory means is downloaded from the Internet.
5. The apparatus as claimed in Claim 1 further comprising means for representing information relating to route(s) leading from a selected tourist site to other site(s) of choice.
6. The apparatus as claimed in Claim 1 wherein the first memory means stored data comprise representation of geographical data.
7. The apparatus as claimed in Claim 6 wherein the data is represented in the form of maps.
8. The apparatus as claimed in Claim 7 wherein the second memory means stores sites' background information.
9. The apparatus as claimed in Claim 8 wherein the background information relates to nature, culture, history, religion and the like of the site(s).
10. The apparatus as claimed in Claim 9 wherein the geographical area identifying means comprise a GPS receiver, means being provided for associating location data produced by GPS receiver with the maps.

11. The apparatus as claimed in Claim 8 wherein said representation is effected in video display form.

12. The apparatus as claimed in Claim 10 wherein said representation is effected in audio form.

13. The apparatus as claimed in Claim 10 wherein said representation is effected in textual form.

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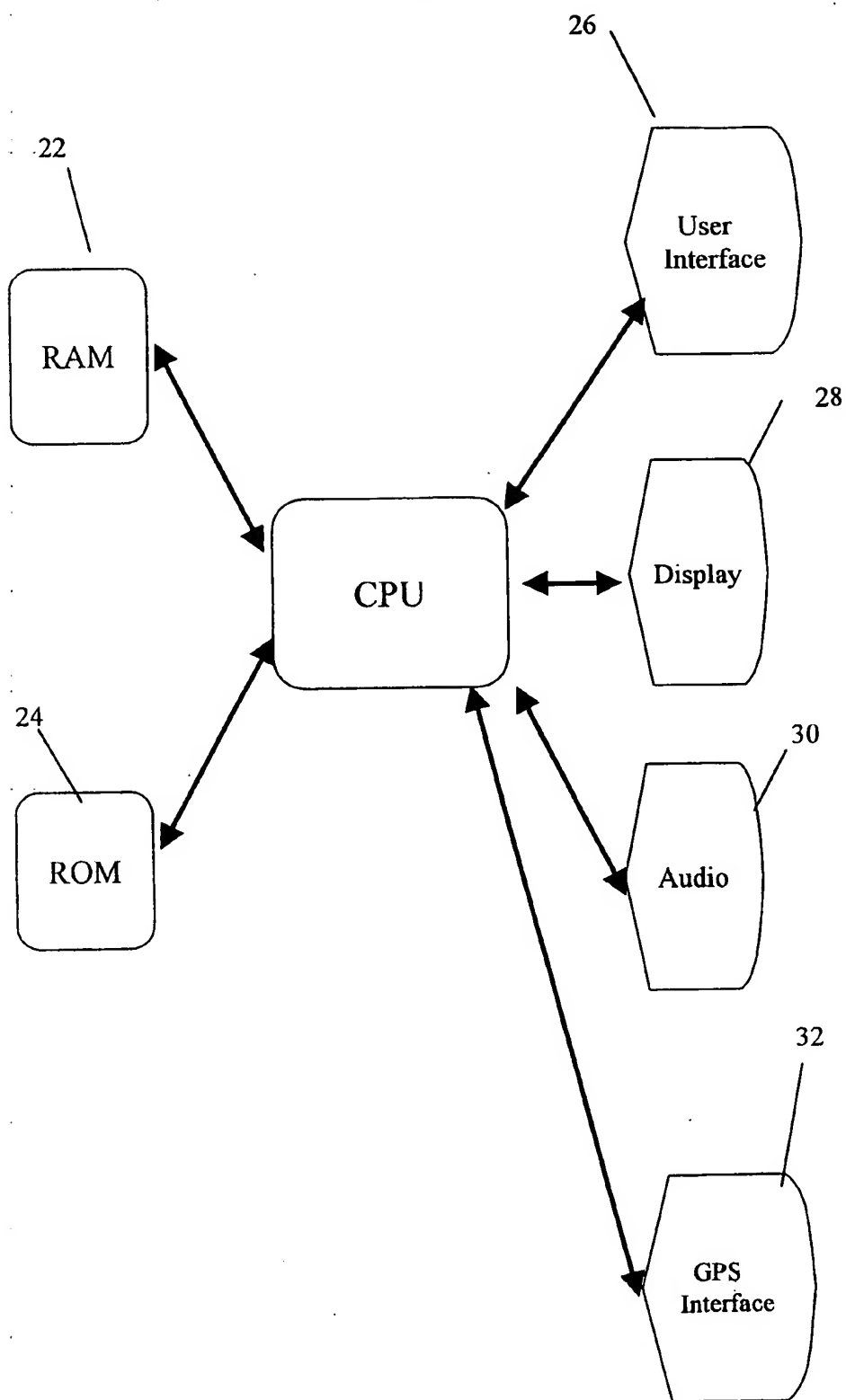


Fig-2

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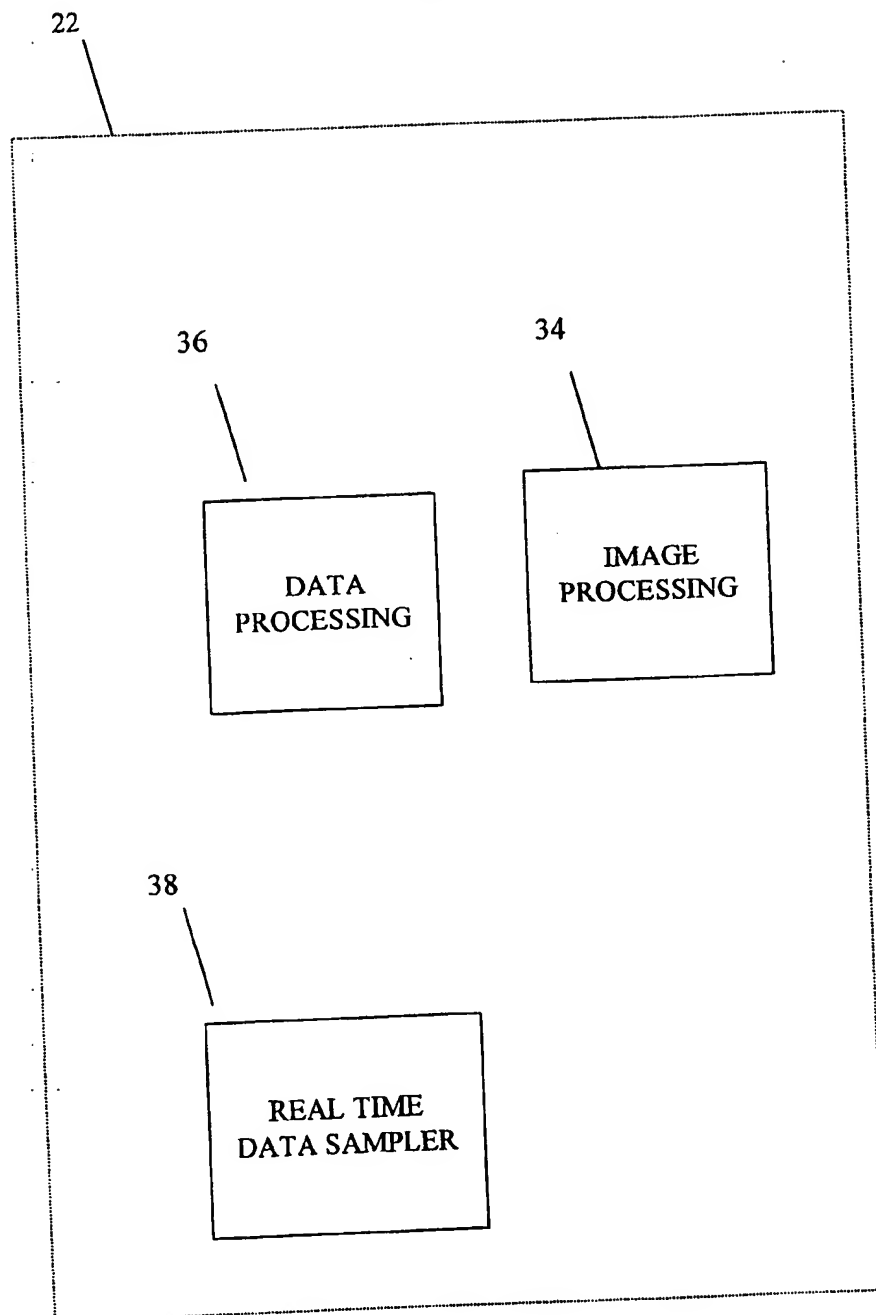


FIG - 3

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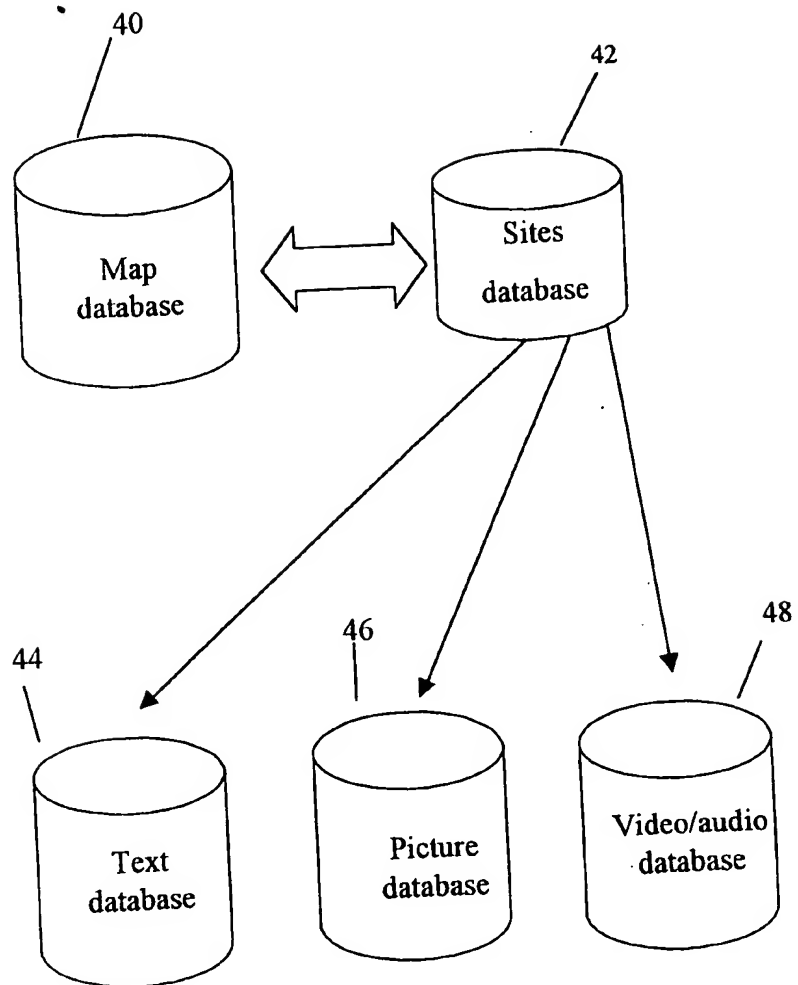
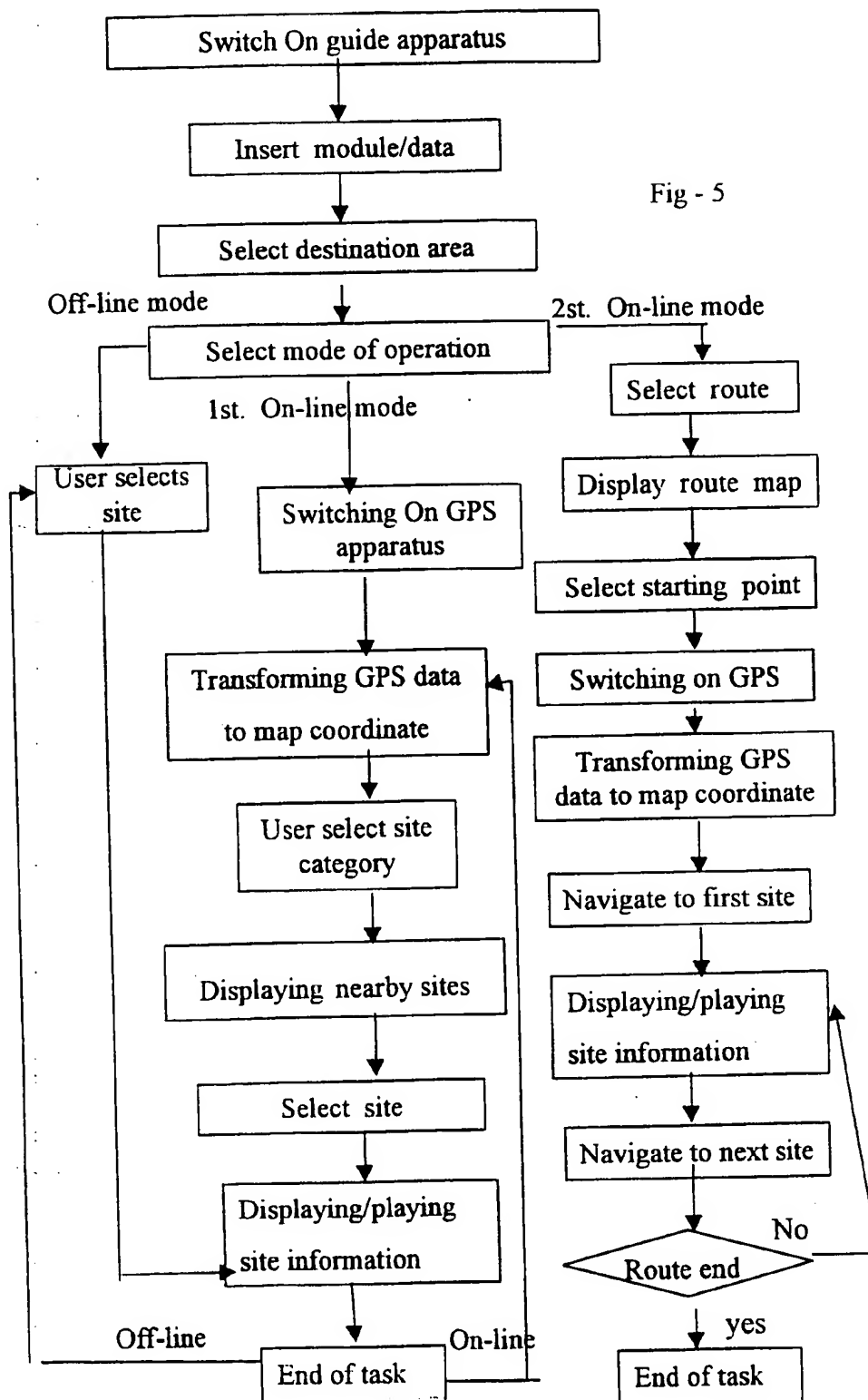


Fig - 4

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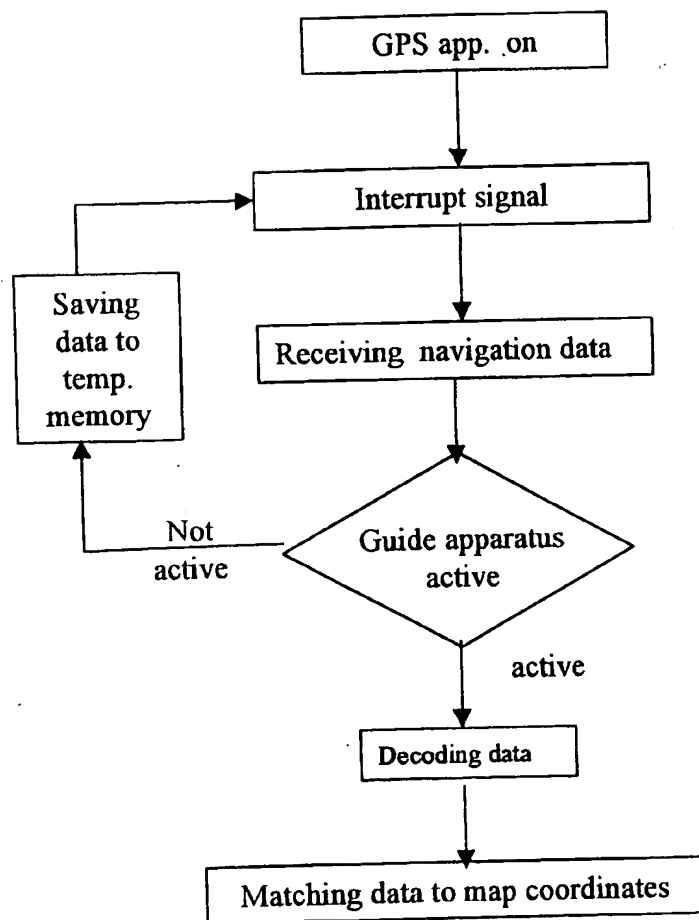


Fig -6

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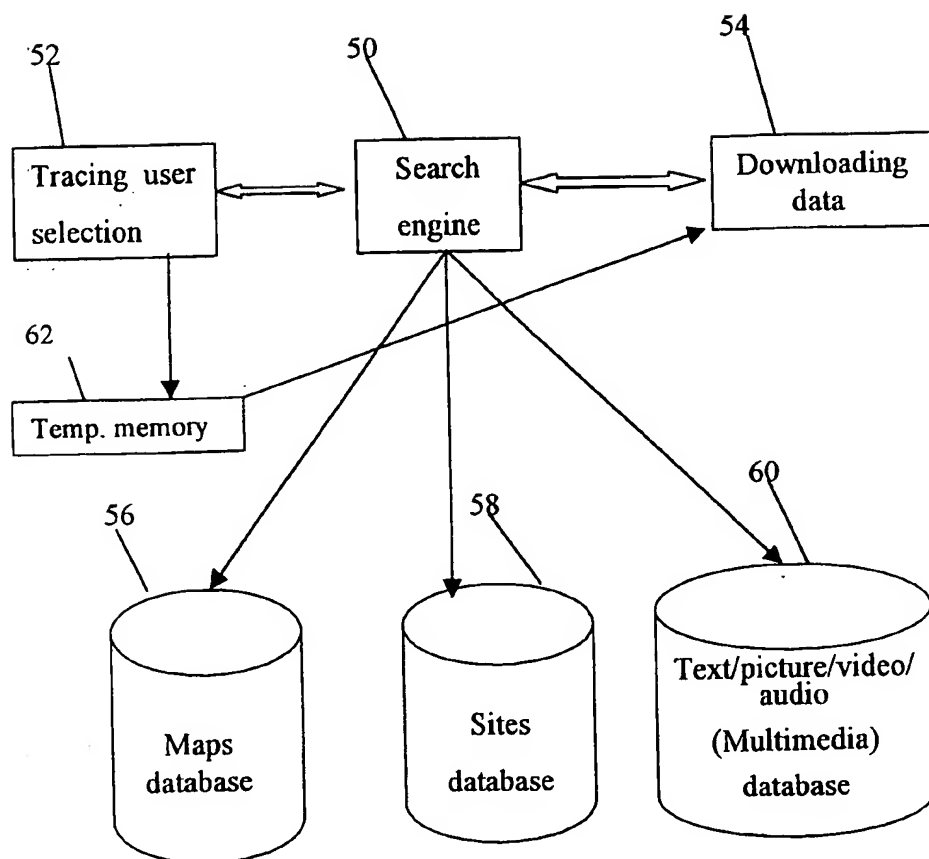


Fig - 7

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IL 99/00267

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 G09B29/10 G01C21/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G09B G01C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 48065 A (DELORME PUBLISHING COMPANY INC) 18 December 1997 (1997-12-18) page 7, line 12 - page 17, line 9; claims 1-40; figure 1A; examples 1-8E ---	1-13
E	EP 0 919 787 A (MITSUMI ELECTRIC CO) 2 June 1999 (1999-06-02) the whole document ---	1-12
A	GB 2 298 539 A (DEEHAN RICHARD) 4 September 1996 (1996-09-04) the whole document -----	1,2,5-12

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9748065 A	18-12-1997	US 5802492 A	01-09-1998
EP 0919787 A	02-06-1999	NONE	
GB 2298539 A	04-09-1996	NONE	